Section 4.21
Cumulative Impacts

This section updates the cumulative impacts analysis presented in the Final EIS. The updated analysis is based on a revised list of past, present, and reasonably foreseeable projects that are or would be located in the Legacy Parkway study area, and that could impact the same resources that would be affected by the proposed action.

4.21.1 Approach and Methodology

4.21.1.1 Changes since June 2000 Final EIS

As described in the Final EIS, the Council on Environmental Quality (CEQ) provides the following definition of a *cumulative effect* (40 CFR 1508.7).

> The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-federal) or person undertakes such other actions.

CEQ guidance recommends that a cumulative impact analysis focus on effects that can be evaluated meaningfully. This recommendation, along with guidance from EPA in the publication *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (U.S. Environmental Protection Agency 1999), and guidance from CEQ in the publications *Considering Cumulative Effects under the National Environmental Policy Act* (Council on Environmental Quality 1997), was used to complete the cumulative impacts analysis for the Supplemental EIS, taking into consideration an updated list of past, present, and reasonably foreseeable projects.

The updated information presented in this section, including both the list of considered projects and the resource specific cumulative impact analysis, is based on the updated information presented in Chapter 4, *Supplemental Environmental Analysis*, of the Supplemental EIS. As such, the study area for each cumulative impact evaluation varies by resource area. The general study area boundary for the proposed action is defined in Section 4.0.1, *Study Area*, of this document; modifications to this boundary, if they were made, are described in the specific resource area sections in Chapter 4 and listed in Section 4.0.1.

4.21.1.2 Changes since Draft Supplemental EIS

Since the Draft Supplemental EIS was published in December 2004, changes have been made in this section. Those changes were made for the following reasons.

- Updated guidance material from CEQ was reviewed in preparation for updating this section, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (Council on Environmental Quality 2005).

- The information presented in Chapter 4, *Supplemental Environmental Analysis*, has been updated. This section has been updated where appropriate to reflect those changes.

- As stated in Section 4.0, *Introduction*, additional minor modifications have been made to the alignments of Alternatives A and E (Final EIS Preferred Alternative), and incorrect calculations and a typographical error have been revised since preparation of the Draft Supplemental EIS. Impact information presented in this section has been updated to reflect those modifications and revisions. See Section 4.21.3.2, *Farmland.*

- Out-of-date information has been updated based on recent input since publication of the Draft Supplemental EIS. The impact assessment has been revised as follows to reflect this update.

  - Construction has occurred in new housing developments, and new subdivisions have been platted. See Section 4.21.2 *Past, Present, and Reasonably Foreseeable Future Actions.*

  - The 1997 developed lands dataset has been updated (Keller pers. comm. 2005), affecting the acreage of potential impacts of future development and the extent of wildlife impacts.

- Modifications to the watershed boundaries associated with the regional study area for wildlife (see Section 4.13.1.2, *Regional Study Area*) resulted in changes to the assessment of regional wildlife habitat availability.

4.21.2 Past, Present, and Reasonably Foreseeable Future Actions

This section provides an updated list of past, present, and reasonably foreseeable projects considered in the cumulative impacts analysis. The following highway projects were funded in the WFRC long range plan and are included in the cumulative impacts analysis.

- I-15 reconstruction from 600 South in Salt Lake City to 200 North in Kaysville (future).

- I-15 reconstruction from 31st Street to 2700 North in Ogden (future).

- The proposed Layton interchange on I-15 about 8 km (5 mi) north of Legacy Parkway (future).

- US-89 reconstruction (present).

- Mountain View Corridor on the west side of Salt Lake valley (future—EIS is currently in progress).

- Redwood Road improvements (future).

- Commuter rail (future—EIS finalized in March 2005).

In addition, past, present, and proposed future land development throughout the study area has resulted in open land being converted to agricultural and urban uses. Past development includes conversion of open land to agricultural and urban uses in both Salt Lake and Davis Counties. Current developments include the new Foxboro residential development in North Salt Lake, Farmington Ranches located west of the Davis County Fairgrounds, Valentine Estates and Mountain View Estates in Woods Cross, and Birnam Woods and Olsen Farms in West Bountiful. Based on the number of Davis County building permits issued since 1999, about 283 ha (700 ac) acres of land are being developed per year in Davis County (Sommerkorn pers. comm.[b]). A similar rate of land development is expected in the future.

4.21.3 Evaluation of Cumulative Impacts

Most of the potential cumulative impacts described in the following sections would be associated with growth that will occur in the region and the change in land use from open to developed land. This planned growth and change in land use does not depend on implementation of the proposed Legacy Parkway, although the types of land use and timing would be somewhat different if the project were implemented, mainly around the two proposed Legacy Parkway interchanges. The growth and change in land use could cause cumulative impacts on land use, farmland, pedestrian and bicycle facilities, air quality, noise, wetlands, wildlife, habitat for threatened and endangered species, historical and archaeological resources, and visual resources as the area is developed.

Changes in the discussions provided in this section from that provided in the June 2000 Final EIS are attributable either to the addition to the cumulative impacts analysis of projects that are now reasonably foreseeable or to changes in the methodology used to determine direct and indirect impacts for specific resource topic areas, as described in the previous sections of Chapter 4. If the information presented relative to cumulative effects in the Final EIS has not changed, a statement to that effect is presented in the discussion below.

4.21.3.1 Land Use

As described in Section 4.1.2, the study area for land use extends to the north to account for potential growth inducement impacts in northern Davis and Weber Counties. Section 4.1.3 of this document concluded that the Shared Solution could contribute to the conversion of land to development uses by changing the land use around the two proposed Legacy Parkway interchanges to commercial use, but that it would not in and of itself induce growth north of the study area.

The combined projects in the Shared Solution, which include the proposed Legacy Parkway, I-15 north reconstruction (widening), and commuter rail, could induce growth and development in northern Davis County and in Weber County.[1] Section 4.1.4 of the previous Final EIS disclosed that, although Legacy Parkway would greatly improve north-south mobility in the North Corridor, the major portion of this improvement in mobility would be attributable to the combined expansion of I-15 and the construction of Legacy Parkway. The cumulative effect of commuter rail was not assessed in the Final EIS because commuter rail was not a reasonably foreseeable project and was not a component of the Shared Solution or the WFRC long-range plan at the time of publication of the Final EIS, even though the Final EIS included a transit component. The addition of commuter rail to the long range plan reinforces the conclusion in the Final EIS that the accessibility provided to these areas by Legacy Parkway, I-15, and

[1] The Shared Solution concept identifies a multi-modal solution to transportation deficiencies both in and around the study area. The concept did not include commuter rail at the time the Final EIS was published. A complete description of the Shared Solution and its evolution since publication of the Final EIS is contained in Chapter 1.

commuter rail could promote accelerated development of residential growth in Davis and Weber Counties, provided other key characteristics of the area are favorable for such growth (e.g., neighborhood conditions [schools, crime], price and economics, air quality, noise, etc.). Transit-oriented development (TOD) associated with the commuter rail portion of the Shared Solution may occur near the rail stations in a manner consistent with planned development near the proposed Mildale and Sandy stations in Salt Lake City. However, it should be noted that TOD would be attributable to the Shared Solution rather than to Legacy Parkway in and of itself.

With the exception of the project right-of-way and Legacy Nature Preserve, local jurisdictions interviewed for both the Final EIS and the Supplemental EIS stated that the level of development in the study area is expected to be the same, regardless of the mobility improvements made and even though the improvements offered under the Shared Solution could affect the short-term location and timing of development in the study area and areas to the north.

4.21.3.2 Farmland

During the 1990s, Utah's loss of farmland was about 8,000 ha (20,000 ac) per year (Utah Department of Agriculture and Food 2000). The amount of farmland in Utah has continued to decline in the study area as agricultural areas within city boundaries have been converted to urban uses. Approximately 283 ha (700 ac) of land are being developed per year in Davis County, much of which is farmland (Sommerkorn pers. comm.[b]). Further, the Utah Division of Water Resources' Water-Related Land Use Data Inventory Map dated 2003 shows about 1,073 ha (2,652 ac) of farmland in the study area, while the Final EIS showed 1,582 ha (3,917 ac) in the study area in 2000.[2]

These historic cumulative impacts on farmland are attributable to development and will probably continue to occur given the current conversion rate of land to urban uses in the study area. Since Legacy Parkway would affect between 97 and 208 ha (240 and 513 ac) of farmland, depending on the build alternative, it would contribute to the cumulative loss of farmland. However, it is likely that most of this farmland loss would be due to planned and ongoing development and would occur regardless of whether Legacy Parkway is implemented.

4.21.3.3 Social

As described in the Final EIS, none of the social impacts associated with the past, present, and reasonably foreseeable projects would occur in the same area or on the same groups as those affected by the proposed action, except that many groups (e.g., minority and low income populations) would more generally benefit by improvements in mobility. This discussion has not changed since publication of the Final EIS.

4.21.3.4 Relocations

Section 4.3 of this document describes the relocations that would be required if any build alternative is constructed. As stated in the Final EIS, other projects considered in this section, including the I-15 reconstruction projects, would also require some relocation of residences and businesses. Residential units affected by highway projects qualify for relocation assistance, and businesses and farms affected qualify

[2] See Section 4.2, *Farmland*, of the Supplemental EIS. Some farmland acreage differences between the Supplemental EIS and Final EIS are attributable to changes in the way farmland was categorized in each document.

for business or farm displacement assistance. This assistance may not be available if similar displacements occur as a result of other types of development.

This discussion has not changed since publication of the Final EIS.

4.21.3.5 Economics

As described in the Final EIS, the economic impacts associated with construction of Legacy Parkway and other projects considered in this section would be temporary and would generally occur at different times. They would represent only a small portion of the overall economics in the study area (see Section 4.5.2), and therefore would only result in a minor cumulative impact. This discussion has not changed since publication of the Final EIS.

4.21.3.6 Joint Development

As described in the Final EIS, the main joint development opportunity made possible by Legacy Parkway would be associated with the multi-use trail that would run adjacent to the proposed highway. Ongoing development in the corridor, including the Foxboro development and Farmington Ranches, could provide additional opportunities for recreational development in conjunction with the Legacy Parkway Trail. The proposed action would not contribute to any other cumulative impacts on joint development.

4.21.3.7 Pedestrian and Bicycle Considerations

As described in the Final EIS, the main pedestrian and bicyclist activities made possible by the Legacy Parkway project would be those provided by the multi-use trail. This trail would benefit the pedestrian and bicycle trail systems spanning Davis and Salt Lake Counties (see Figure 4.6-1). The trail is reflected in the general plans of several cities in the study area, and it has been integrated into the proposed trail systems for several proposed and existing residential developments near the proposed highway (see Section 4.7).

Construction of commuter rail would also improve pedestrian access in the study area by generally improving the walkable transportation options in the study area. Although improvements to I-15 would not specifically contribute to pedestrian and bicycle opportunities in the study area, the combined effect of commuter rail and the proposed action would result in a beneficial cumulative impact on pedestrian and bicycle opportunities in the study area.

4.21.3.8 Air Quality

As described in the Final EIS, air quality would improve slightly over future No-Build conditions with implementation of the Legacy Parkway project and other projects considered in this section because the projects are designed to reduce congestion and travel times, facilitating compliance with air quality standards. The predominant air quality factors influencing air quality in the study area have historically been and will likely continue to be the stationary and mobile source emissions associated with the continued development, almost all of which would occur with or without implementation of the Legacy Parkway project. It should also be noted that conformity with state air quality goals requires a regional and cumulative analysis, which is discussed in Section 4.8, *Air Quality*.

4.21.3.9 Noise

Construction of any proposed build alternative would increase noise levels in the noise study area (i.e., within 457 m [1,500 ft] of the proposed build alternatives) from noise levels typical of a rural area to those associated with the new highway (Table 4.21-1). Existing noise levels in the study area, which represent the baseline for the cumulative impact analysis, range from about 39 dBA (undeveloped areas) to 67 dBA (next to I-215). Potential cumulative impacts from noise would be associated with the travel-related noise from the highway projects described in this section, including the proposed action, as well as from ongoing and planned residential, commercial, and industrial development in and adjacent to the study area.

Table 4.21-1 Typical Noise Levels in Rural and Urban Areas in the U.S.

Area	Typical Range of dBA	Average Census Tract Population Density (people/square mile)
Wilderness and rural	16–35	Zero to little population
Quiet suburban residential	48–52	630
Normal suburban residential	53–57	2,000
Urban residential	58–62	6,300
Noisy urban residential	63–67	20,000
Very noisy urban residential/downtown city	68–75	63,000

Source: Cooper Engineering 1985; Canter 1996

It is likely that the study area will be developed by 2020 to include more residential, commercial, and industrial land uses, regardless of whether the Legacy Parkway project is implemented (see Section 4.1, *Land Use*, of this document). In addition, as roadways and municipal support systems are developed to support these changes in land uses, it is likely that noise levels would continue to increase, changing from those of a suburban residential area to those of an urban residential area. As stated above, these cumulative noise impacts would likely occur with or without the proposed action.

It should be noted that the northern portion of Legacy Parkway would parallel I-15 just south of the US-89/I-15 interchange. Projected traffic on Legacy Parkway in combination with traffic on US-89 and I-15, as well as operation of commuter rail, would result in a cumulative noise impact on the surrounding area. Operation of the highways alone would result in noise levels approximating an urban residential/downtown city environment. Noise levels would increase when a commuter rail train is using a track in the area but would decrease to between 68 dBA and 75 dBA after the train passes.

4.21.3.10 Water Quality

As described in the Final EIS, the primary effect on water quality from the Legacy Parkway project would be from pollutants and sediments contained in stormwater runoff from impervious surfaces and construction sites. Since development, including construction of additional impervious surfaces, would likely occur in the study area with or without the proposed action, Legacy Parkway would have a relatively minor cumulative impact on water quality, taking into consideration potential build out conditions without the project. In addition, the Legacy Parkway project, as well as the other highway

projects assessed in this section, would use extensive best management practices during construction to minimize pollutant and sediment concentrations in stormwater runoff.

Deicing practices associated with Legacy Parkway, as well as other roadway improvements considered in this section, could affect the salinity of runoff in the study area. Since much of the soil and water in the study area is already highly saline because it is within the floodplain of Great Salt Lake, it is unlikely that temporary acute increases in salinity associated with deicing practices would have a long-term impact on water resources in the study area. Both the Legacy Nature Preserve and the vegetated filter strips associated with the highway would minimize the cumulative impact of this practice.

This discussion has not changed since publication of the Final EIS.

4.21.3.11 Wetlands

As described in Sections 4.12, *Wetlands*, and 4.13, *Wildlife*, of this document, the loss of wetland habitat in the study area has been an ongoing process that began with settlement and development of agriculture in the nineteenth century and continues under current conditions. For the wetlands analysis, the Supplemental EIS assumed that future development could affect all remaining uplands in the wetlands study area, resulting in adverse indirect impacts on remaining wetlands. The wildlife analysis, using a slightly different characterization of habitats (see Section 4.12.2.2, *Wetland Cover Types*), concluded that there was a historic loss of approximately 58 percent of the wetland/riparian habitat in the modified project area (Jones & Stokes 2005).

Loss of wetlands continues; wetland fill authorized in Salt Lake and Davis Counties between 1992 and 2003 averaged over 12 ha (30 ac) per year. Future loss of wetlands and wetland functions appears likely, with or without implementation of any of the proposed build alternatives, given the historic trend and future development pressure within the study area. Under the future conditions No-Build Alternative, even if no wetland fill were to occur, wetland functions in the study area would decrease over 20 percent due to planned development of adjacent upland habitat.

The Legacy Parkway project would contribute to the cumulative loss of wetlands and wetland functions in the study area. The impact is substantial both because of the timing of the impact (after many wetlands have already been filled or lost wetland functions) and the magnitude of the impact, compared with those of other current projects.

4.21.3.12 Wildlife

See Section 4.13, *Wildlife*, for a discussion of cumulative impacts on wildlife and wildlife habitat.

4.21.3.13 Floodplains

As described in Section 4.14, floodplain impacts were assessed for both the 100-year floodplain associated with Great Salt Lake and the 100-year floodplains of the streams that the proposed highway would cross within the study area. Cumulative impacts on stream floodplains from past, present, and reasonably foreseeable projects are limited because project proponents are generally required to maintain the existing flood characteristics (i.e., flood elevation and boundary) of rivers and streams affected by a project.

For the Great Salt Lake floodplain, most of the proposed build alignments would traverse the eastern edge of the floodplain, as delineated by the Corps and FEMA (see Section 4.14). Where the Great Salt Lake floodplain lies on the eastern side of Legacy Parkway, the highway design would allow flood waters to pass to the west side of the highway through equalization culverts to minimize impacts on the floodplain elevation or boundary. Similarly, the I-15 reconstruction projects would require a slight encroachment on the Great Salt Lake floodplain north of Chase Lane in Centerville, and future development could encroach on the floodplain, although the nature and location of such encroachment are not known at this time.

4.21.3.14 Threatened and Endangered Species

As described in the Final EIS, Legacy Parkway, combined with other highway projects and development in the study area, could have a cumulative effect on threatened, endangered, and state species of special concern in the study area. An updated list of federal threatened and endangered species and state species of special concern that could occur in the study area was provided by USFWS and the Utah Division of Fish and Wildlife, and is summarized in Section 4.15, *Threatened and Endangered Species*, of this document.

The bald eagle (*Haliaeetus leucocephalus*) is the only federally listed species that could be affected by the proposed action. The commuter rail final EIS (Federal Transit Administration and Utah Transit Authority 2005) and the I-15 North Corridor draft EIS (Federal Highway Administration and Utah Department of Transportation 1998) both state that impacts on federally listed species, including the bald eagle, and state species of special concern are not expected. Legacy Parkway, as well as some private developments proposed in the study area, could contribute to cumulative impacts on threatened and endangered species through loss of habitat and an increase in human disturbances.

4.21.3.15 Historic and Archaeological Resources

Past regional transportation projects, future regional transportation projects (including Legacy Parkway), and current and planned development, have affected and will continue to affect historic and archaeological resources in the study area that have various degrees of integrity and significance (see Section 4.16.2). The Final EIS recognized the cumulative effects on cultural resources of the reconstruction of I-15 and future development, along with the impacts of Legacy Parkway. The other reasonably foreseeable actions will contribute to additional cumulative effects on historic and archaeological resources.

4.21.3.16 Hazardous Waste Sites

As stated in the Final EIS, the proposed action would not contribute to cumulative effects on hazardous waste sites because any environmental effects would be mitigated. There has been no change in this discussion since publication of the Final EIS.

4.21.3.17 Visual Resources

As described in the Final EIS, the majority of the cumulative visual impacts in the study area have been caused by land development and the infrastructure associated with it, including streets, highways, railroads, and power lines. The existing visual character of the study area is already disturbed by the presence of pavement, cut-and-fill slopes, grade separations, lighting, roadway hardware, and drainages

structures associated with I-15, I-215, and US-89, as well as other local roadways in the vicinity (see Section 4.18, *Visual Resources*). Several new developments in the study area, including the Foxboro development and Farmington Ranches, have been completed since publication of the Final EIS, further changing the visual environment and making it more urban.

The proposed Legacy Parkway would result in an additional amount of currently undeveloped land being converted to roadway use. This conversion and any indirect development associated with the new roadway would contribute to the historic, cumulative visual impact associated with changing the visual nature of the study area from rural to urban uses.